

# SJVAPCD RULES 4306 & 4320 CLEAR THE AIR

BOILERS

PUMPS

SYSTEMS

SERVICE

PARTS



**R.F. Macdonald Co.**  
*your boiler & pump solutions team*

*~ since 1956*

Meet the **NEW 2021 Boiler Emissions Rules** set by San Joaquin Valley Air Pollution Control District (SJVAPCD) and create a Compliance Plan with R.F. MacDonald Co. to meet the deadlines!

# SJVAPCD COMPLIANCE RULES

## Rule 4306

## Rule 4320



**AN EMISSION CONTROL PLAN & AUTHORITY TO CONSTRUCT APPLICATION FORM MUST BE SUBMITTED FOR ALL APPLICABLE EQUIPMENT**



**DEADLINE: MAY 1, 2022**



Firetube Boilers: 5-75 MMBtu/hr  
 Permit: Greater than 9 PPM NO<sub>x</sub>  
 Solution: Retrofit to 7 PPM NO<sub>x</sub>  
 Deadline: 12/31/2023

Boilers: 5-20 MMBtu/hr  
 Solution: Retrofit to 5 PPM NO<sub>x</sub>  
 Deadline: 12/31/2023

Firetube Boilers: 5-75 MMBtu/hr  
 Permit: Less than 9 PPM NO<sub>x</sub>  
 Solution: Retrofit to 7 PPM NO<sub>x</sub>  
 Deadline: 12/31/2029

Boilers: Greater than 20 MMBtu/hr  
 Solution: Retrofit to 2.5 PPM NO<sub>x</sub>  
 Deadline: 12/31/2023

**CONTACT YOUR LOCAL R.F. MACDONALD CO. REPRESENTATIVE TO DISCUSS OPTIONS FOR YOUR FACILITY**



# WHAT ARE YOUR OPTIONS?

## BURNER RETROFIT & CONTROLS UPGRADE



## SELECTIVE CATALYTIC REDUCTION



## REPLACE YOUR EQUIPMENT



## BURNER RETROFIT & CONTROLS UPGRADE SUB 5 PPM NO<sub>x</sub>

### NEW CLEAVER-BROOKS SBR-5 ULTRA LOW NO<sub>x</sub> BURNER

**ULTRA LOW-NO<sub>x</sub> EMISSIONS** - SUB 5 PPM

**DUAL FUEL** - NATURAL GAS WITH NO. 2 OIL OPTION; FUEL SWITCHOVER WITHOUT MECHANICAL ADJUSTMENTS

**3-4% O<sub>2</sub>** - ACROSS A WIDE LOAD RANGE

**MAXIMUM EFFICIENCY** - PROVIDED BY STANDARDIZED PARALLEL POSITIONING

**OPERATIONAL RANGE** - 6:1 TURNDOWN WHEN FIRING NATURAL GAS

**UNIFORM FLAME** - FOR EQUAL HEAT TRANSFER ALLOWED BY PREMIX FUEL

**EASY ACCESS** - AIR HOUSING FOR INTERNAL COMPONENTS

**INTEGRATED CONTROLS** - WITH REMOTE IoT MONITORING CAPABILITIES

**SUPPORT** - LOCALLY TRAINED REPS & CERTIFIED TECHNICIANS

**SILENT OPERATION** - WITH AN ADVANCED COMBUSTION AIR FAN WHEEL; LESS HORSEPOWER AND LESS NOISE

**ULTRA LOW-NO<sub>x</sub>/CO** - ACHIEVED WITHOUT A FRAGILE SURFACE COMBUSTION BURNER HEAD, MAKING IT SAFER AND MORE RELIABLE



## TOTAL INTEGRATION DOESN'T STOP WITH THE BURNER

# SELECTIVE CATALYTIC REDUCTION

SUB 2.5 PPM NO<sub>x</sub> • SUB 5 PPM NH<sub>3</sub> SLIP

SCR is a post-flue gas treatment that reduces NO<sub>x</sub> emissions, using ammonia as a reducing agent. The mixture comes into contact with a catalyst, selectively transforming the NO<sub>x</sub> into harmless nitrogen and water. Options are available for reducing CO emissions as well and can be integrated into a single packaged solution.



## ANHYDROUS OR AQUEOUS AMMONIA

- CUSTOM AMMONIA FLOW CONTROL UNIT
- CUSTOM AMMONIA INJECTION GRID
- INTEGRATED CONTROLS
- REQUIRES RISK MANAGEMENT PLANNING
- STORAGE & HANDLING OVERSIGHT PER OSHA 1910.111



## UREA

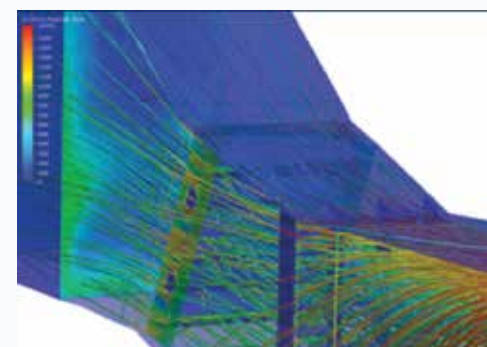
- **R.F. MACDONALD CO. PATENTED** DESIGN DOES NOT REQUIRE VAPORIZER
- DOES NOT REQUIRE RISK MANAGEMENT PLANNING
- ELIMINATES HAZARDS OF STORING AMMONIA
- REDUCES ELECTRICAL LOAD COSTS
- LOWER OPERATIONAL COST
- REDUCES FOOTPRINT



## R.F. MacDonald Co. ENGINEERING SERVICES

*your boiler & pump solutions team*  
~ since 1956

- COLD FLOW MODELING (CFM) OR COMPUTATIONAL FLUID DYNAMICS (CFD)
- UTILIZES MULTIZONE INJECTION GRID
- 3D MODELING DESIGN — INTEGRATION WITH 3D SCANS
- CUSTOM CONTROLS INTEGRATION
- EMISSIONS CONTROL FOR VARIOUS FUELS
- INLET AND OUTLET SAMPLING GRIDS AVAILABLE



# REPLACE YOUR EQUIPMENT



FIRETUBE BOILERS

INDUSTRIAL WATERTUBE BOILERS

CONDENSING HYDRONIC BOILERS

HEAT RECOVERY STEAM GENERATORS

ELECTRIC & ELECTRODE BOILERS

MODULAR STEAM BOILERS

SKID-MOUNTED BOILERS

WASTE HEAT BOILERS

COGENERATORS

STEAM SYSTEMS

THERMAL FLUID SYSTEMS

HOT WATER SYSTEMS

WATER HEATERS

BURNERS & CONTROLS

EXHAUST SOLUTIONS

PERMITTING, LAYOUT

PLANT MODIFICATIONS

CUSTOM-ENGINEERED SOLUTIONS

## MANUFACTURER SPOTLIGHT



**INDUSTRIAL  
COMBUSTION**



**VAPOR POWER** INTERNATIONAL

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Training based on rules set by  
**San Joaquin Valley**  
AIR POLLUTION CONTROL DISTRICT

Sign Up  
for Training!



Read the  
New Rules!



# SCHEDULE A WEBINAR

**R.F. MacDONALD Co.**

**LOCATIONS IN THE  
SAN JOAQUIN VALLEY  
AIR POLLUTION CONTROL DISTRICT**

**R.F. MacDONALD Co.**

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MODESTO, CA 95358

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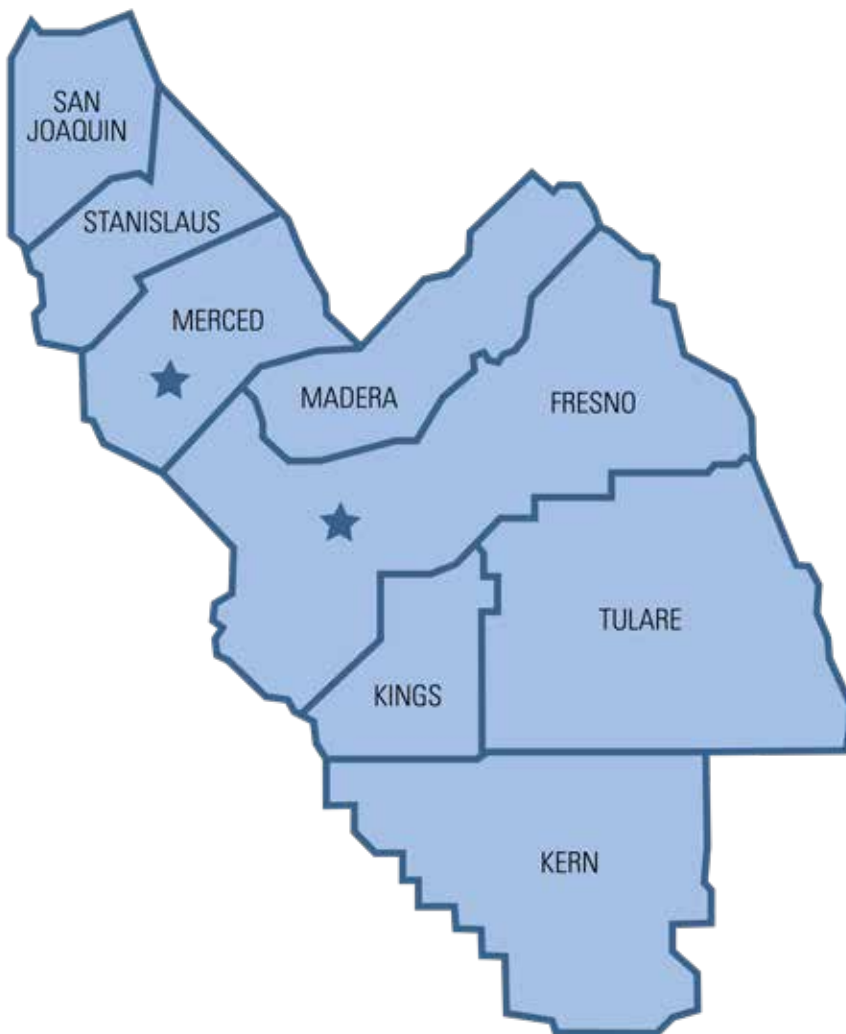
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SITE VISITS OR VIRTUAL/ZOOM MEETINGS AVAILABLE TO PROVIDE SITE-SPECIFIC INDIVIDUAL NEEDS



**VIRTUAL  
COURSE**



**SCHEDULE  
A TIME**



**MICROSOFT  
TEAMS**

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